

# ZYNAR

## SILICON TECHNOLOGY & COMPUTER SCIENCES

A regular summary of Press information; articles and product announcements.

Volume 1  
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October 1981



**Colin Crook:**  
**Silicon Valley,**  
**Uxbridge**

Colin Crook sat down with a blank sheet of A4 paper in front of him and thought, My God, how do we get going? He was trying to write a blueprint for one of the most far-fetched companies launched in Britain in the past few years.

Crook is an electronics engineer with a curriculum vitae which reads like a history of the silicon chip. By his mid 20s, when he decided that talent alone was not enough, he had worked in the BBC Engineering Department, Canadian Marconi, and the National Aeronautics and Space Administration in Huntsville, Alabama. So he came back to the UK, joined Plessey Automation in Liverpool and added some paper qualifications in electrical engineering at Liverpool Poly.

Next stop was Motorola in Geneva, in charge of advanced semiconductor technology for Europe; a successful mission, for Motorola then shipped him back to the US to look after large chunks of their American operations. Motorola is one of the giants of the semiconductor business but even so Crook's proudest achievement, the 68000 microprocessor, had to be developed without his bosses knowing until, as he puts it, 'it was advanced enough to release to corporate politics'.

Next a near miss: Crook was 'nearly' one of the founders of Zilog, a highly

successful silicon chip company. But he wasn't an American citizen, so that fell through. Two years ago he came back to the UK so that his children could get an English education, and for a while ran Rank Precision Industries.

But his interest really lies in what he calls 'sunrise industries' - the brave new world of the silicon chip. He persuaded Rank, a fairly bedraggled company sustained for much of the past decade by its interest in Xerox copiers, to put some money into launching a totally new venture. The condition was that they should keep out of the way and leave the ideas, and the running of the company, to Crook.

So he came face to face with his blank sheet of paper and invented Zynar, a company which brings a whiff of California's Silicon Valley to the sober suburban purlieus of Uxbridge High Street. Behind a tidy facade which could conceal a building society office, young people whisk about ministering to micro-computers and staring into glowing green screens, to the occasional bewilderment of passers-by. Next door is a branch of McDonalds.

Zynar is not aiming to produce silicon chips, or even micro-computers. Others already do that admirably well, Crook believes, and there isn't very much point in trying to get into a crowded market. (He considers the British Government's investment in the chip manufacturer Inmos an unwise move.) Instead Zynar will buy in micro-computers from other com-

panies - currently the Apple Corporation, who make a highly successful micro - and put them together to create a network of interlinked computers which can offer the same performance as a large central 'mainframe' computer at a fraction of the cost.

In Crook's ideal company of the future, and in Zynar today, everybody has a micro-computer on their desk. It is linked up, via the network, to everybody else's micro, so can be used for sending messages. 'Nobody writes memos in this company,' he says. 'We only have two typewriters between the lot of us, and we're hoping to get rid of one of those.'

In addition, the computer on the desk can be used for a variety of other tasks, like calling up information from a data-bank Prestel-style, computer-aided design, data processing, financial planning, and so on. Although each computer is only a micro, and therefore of very limited capabilities, the way they are linked together and to a large memory enables the system to behave as if it were a computer of much greater power.

So what exactly is it that Zynar is selling? 'We sell the hardware for connecting the micros into the system, and we sell the very very clever software that makes it all work,' says Crook. 'The customer gets a system that gives him all the computing power he would get from a big mainframe, at a fifth of the cost. The way things are going, by 1985 we'll be able to offer people almost infinite computer power right on their desks.'

Crook's conversation is full of the spicy jargon of the electronics industry. He talks of 'trying to get the culture right' by which he means persuading his engineers to behave as if they were in Silicon Valley and not in Uxbridge. To help in the process and keep Zynar on its toes there is a sister company, Nestar, established in Palo

In its 15 months of existence Zynar Ltd has achieved remarkable success with its Local Computer Network system. LCNs represent the major direction for data processing in the 1980s' an assertion given substance by the constant Press coverage. This newsletter shows just some of the coverage received by Zynar. We have 2 volumes of clippings at our headquarters in Uxbridge - and we look forward to seeing you there.

Roy Sheridan  
Marketing Manager

Alto and run by Dr Harry Saul, who used to work for Crook at Motorola. Crook and Saul communicate daily by data link and Crook's staff are, as he puts it, 'rotated through Palo Alto every few months' to keep them up to scratch.

It is a brave and, I suspect, unprecedented attempt to import into Britain the attitudes and atmosphere which have made the area around San Francisco such a forcing ground for new companies. 'I don't want to work on inconsequential things,' Crook says. 'There's nothing to be gained by an engineering tour de force. You have to be shipping and selling. One lesson I have learnt is that there's no kudos until you're shipping.'

One system Zynar has shipped is to Citibank, and the Government's Central Computer and Telecommunications Agency has one for evaluation. There's one installed in Paris. For a company less than a year old, this is a good start. 'We're going damn good,' says Crook. 'We're into the area where the future lies, and we're giving the customer a fabulous cost performance ratio he can't get anywhere else. It's the shape of things to come.'

Observer Colour Supplement  
12 July 1981



The 20-station network for the NCC going through its 2-week 'burn-in' prior to installation. See P3 for more details.





# Linking into local nets

Computing based on large centralised processors has many disadvantages. The technology is expensive, and in order to make efficient use of this resource, skilled intermediaries (programmers/analysts) are needed between the machine and those using it. This distancing between user and computer frequently results in hostility and frustration on the user's part, largely because predefined systems cannot respond to unanticipated user behaviour or requirements. Furthermore, the various system applications (such as accounting, purchasing and planning) will frequently have been

implemented in isolation and over a long time, taking little account of the existence, though the organisation requires information to be communicated between departments.

These disadvantages have fuelled the in departmental use of timesharing and minicomputers. But these developments have brought little benefit, and often a need for integration and communication within the organisation.

The technology reached the peak in the early 1980s where individual machines and microcomputers became economical. The explosive growth and such an approach bears witness not only to the need for marketing but also to the need for more computing power. It also shows that people are willing to devote more energy to learning the use of systems. Unfortunately, while often an increase in satisfaction and efficiency, individual computers serve only to emphasise the isolation of the individual and/or department from other data processing sectors and from other data processing activities. And yet microcomputers (not more so in the near future) present possibilities for increasing the power of an organisation at an individual level.

Local computer networks (LCNs) have the potential of microcomputers. They

## Foreign exchange goes online

by Donald Kennett

CITIBANK, one of the world's largest foreign exchange dealers, has started the evaluation phase of a system designed to automate its central London dealing room.

The system is based on Apple micros linked together by a Zynar local computer network, and if current trials with 12 Apples are successful, the network will be expanded to link 80 of them by the end of the year, followed by another 33 acquired over the last 18 months for other applications.

Hal Hovland, of Citibank treasury department's technology management unit, said that the Apples would be built into special dealers' desks which currently provide access to the Reuters Monitor financial information service and to a closed-circuit video system.

Each dealer will control his terminal and input data through a graphics tablet — one made by GTCO in the US has been chosen because it can be operated through the wooden desk top. He will call programs tailored to his specialised trading function from an Apple-controlled Winchester disc-based network file server, and will input details of the deals he makes to a database of foreign exchange and other money market deals held on Digital Equipment PDP-11s at Lewisham.

Computer Weekly  
9 July 1981



PRESS RELEASE  
1 JULY 1981

ZYNAR INTRODUCES HIGH SPEED CARTRIDGE TAPE  
BACK-UP FOR CLUSTER/ONE NETWORK

Zynar Limited announces the availability of a high speed cartridge tape back-up drive for its Cluster/One Model A Local Computer Network. The Model A-2401 drive uses a 1 inch, 450 foot tape cartridge which holds over 20 Megabytes of formatted data. It is the newest in a series of sophisticated hardware and software options for Zynar's Apple-based local area network.

The Model A-2401 tape drive operates in the "streaming" mode, recording 8000 bits per inch of data at 30,000 bytes per second, making it possible to write 30 Megabytes of data on one cartridge in under 12 minutes. Operating from the Network File Server — a dedicated Apple II computer that controls access to system hard and floppy disk drives no more than 10 minutes to create or restore a back-up tape on Zynar's 16.5 Megabyte Winchester hard disk.

Zynar's streaming drive incorporates two unique, value added features rarely included in tape back-up systems:

- 1) An incremental back-up and restore feature which permits the user to back-up only the sections of the disk that have been modified since the previous back-up.
- 2) Error checking of data as it is being recorded on tape. This is accomplished by a system of double tape heads — as one writes the data, a second head reads and verifies the newly written data. If an error is detected, a signal is given to rewrite the block in question.

The Model A-2401 tape drive carries a retail price of £3500. Regular customer shipments will begin in August. Zynar is the European partner of Hestor Systems Incorporated, of Palo Alto, California. They design, develop, manufacture and market communications hardware and software for microcomputer-based Local Computer Networks (LCNs). Their LCN products have been installed with customers worldwide for over a year.

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Computer Week  
2 July 1981

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◁ computer facilities is in the hands of the individual. He may proceed at his own pace and in his own way. But by linking the computers together, the individual is free to act as part of a group, and as part of other computer systems.

The working of a small manufacturing company will serve as an example. There are several functions within the organisation: warehouse management, production management, accounting, selling, purchasing, etc, all operating within the context of a plan. Each function performs particular tasks. Warehouse staff have to book goods received. Sales clerks have to register items, sold and so on. Each of these functions can be aided by the use of a microcomputer. However, goods received affects raw materials inventory, which influences production planning, which in turn determines the ability of sales to fulfil an order. And the total picture must be available to those responsible for strategic decisions. In other words, each function makes use of information produced by others. Establishing an LCN gives the company better use of microcomputer technology, by facilitating such communication between users.

LCNs can also give users access to other resources shared with other users, by way of 'server' stations which manage such resources. Most frequent of these is the management of mass storage which is paramount in the pooling

of information. Sharing resources not only benefits the operation of the system but also reduces costs. One mass storage device shared between several users will be cheaper than multiple lower grade devices on each workstation. Similarly, a printer can be managed by a server running spooling software.

**Local computer networks realise the potential of microcomputers, by placing computing power in the hands of the individual. But Roy Sheridan, marketing manager at Zynar, stresses that by linking the computers together, the individual is free to act as part of a group, and as part of other computer systems.**

**Local networks can also allow resources to be shared by users.**

Servers also meet the requirement for the LCN to communicate with other devices and locations. Thus a communications server is a frequent member of the LCN community, managing access to and from the network by other workstations and other computer devices. A good example of this applies to the Post

Office's Prestel. A Zynar LCN can include a Prestel Server, enabling workstations on the network to access Prestel frames, and where the subscriber is an information-provider, to create them. Transatlantic links with other LCNs already exist, and so on.

In this way LCNs add value to organisational use of microcomputers by enabling them to communicate and share resources, and integrating them more closely into the functioning of the company. The applications run may be created and maintained by skilled central personnel (since shared mass storage permits central program maintenance) or by individuals and departments according to their own requirements. Users will also perceive operational benefits. Where no central or controlling device exists, users are less affected by others' activity. They are unlikely to experience the performance problems which characterise growth in usage of mini and mainframe systems.

All types and sizes of organisation can benefit from adopting this approach. Small companies can use data processing where previously it would have been too complex and expensive, since microcomputer technology is far less costly than mainframe and mini. In the larger organisations LCNs can satisfy pressing needs and still be integrated with 'corporate' data processing on mainframe and minicomputers by means of the communications server. □

Informatics July 1981

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*ZYNAR Ltd of Uxbridge, which markets the Nestar local computer network in Europe has launched a German subsidiary company. Zynar Vertriebs GB will be based in Wiesbaden.*  
*Zynar says that the response it received from the Hanover Fair recently indicated a "vast market" for local networks in Germany.*

Electronics Weekly  
22 July 1981

## Service runs micro trial

Computers are being given a chance to prove themselves in the Civil Service. One of the questions that it is anxious to answer is whether typing time can be saved by allowing the authors of documents to key in their own ideas to a microcomputer.

The first try was described as: 'An ideas-gathering session, which we hope we will lead to a lot more experiments throughout the Civil Service'.

The first experiment uses a dozen Apple personal computers, but the CCTA is clear that this will be a test of the use of microcomputers, not of specific machines.

But the choice of the Zynar local area network had one thing in its favour: 'It is simply the only one that we could find that was available,' a spokesman said.

Computing  
24 April 1981

## Network for NCC

by Robert Parry

THE National Computing Centre is to have a local computer network in its Manchester headquarters. A Zynar system with 17 workstations will be installed there this week, giving consultants in the office and communications systems division a chance to gain experience with such systems.

Each workstation, consisting of an Apple II computer and a monitor, will have access to printers and 33 Mbyte Winchester storage.

According to Steve Price, one of the consultants who will be using the network, the primary use will be for electronic mail, mainly internal memos.

He will also be using it for personal filing, for names and addresses, lists of contacts and things to do, and for preparing and editing reports.

Other users, apart from the consultants, will include managers and secretaries within the division. Bookings for the various training courses run by the Centre will also be handled on the system.

The Zynar system was chosen because it was available for immediate installation and because it is proven. There are about 150 systems in use worldwide, with 35

Computer Weekly  
10 September 1981

installed in the UK. These include one in Zynar's Uxbridge offices and a large one, with 80 workstations, at Citibank in London where it is used for foreign exchange dealing.

Networks such as Logica's Cambridge Ring implementation were also considered but not picked because of availability. 'The NCC should promote the idea that you as soon as possible', said Price.

Zynar's Roy Sheridan was happy with the £70,000 deal. He said: 'It is very significant. The NCC is an important body in the way computing is going.'

Hardware for the interfaces to the network are manufactured in the US by Zynar's sister company Nester, which originally developed the system and its software. Zynar hopes to start manufacturing in the UK and has already developed some software in conjunction with Mike Gardner of Owl Computers in Bishops Stortford.

This is an in-house viewdata system called OverView, due to be launched officially next month. It will be compatible with Prestel and will be used to create pages for in-house use.

■ Roy Sheridan has joined Zynar as marketing manager. He previously spent eight years at IBM, where he specialised in the marketing and application of personal computers.

Computer Weekly  
25 June 1981



# CITIBANK

To the uninitiated the scene is one of chaos. Dealers bedecked with telephones bark staccato commands into squawk boxes, which respond incomprehensibly at 80 decibels. Girls hunched over telex machines periodically yell numbers at no-one in particular. Deals are made with faceless names on the other side of the globe and recorded on paper. Paper moves all around the room. Vast sums of money change hands.

## CONSUMATE SKILL

The scene is repeated all over the world in scores of capitals representing the world's money market. To survive in this environment requires consumate skill and matchless knowledge combined with the ability to think rapidly and retain information. Currencies can move suddenly and quickly, causing a considerable shift in the overall position of the dealing room. A dealer will react quickly — but it may be some time before others can be made aware of the change.

It is in this environment that Citibank decided to extend their use of microcomputers both to help the dealers and to keep timely information on the total position of the dealing room.

## LEADING TECHNOLOGY

Citibank is the world's largest Foreign Exchange (FX) dealer, and is committed to the use of leading technology to increase its efficiency and effectiveness. Hal Hovland, Vice-President of the Treasury Technology Unit, seized the opportunity



A dealer desk on the Citibank network. The keyboard is connected to Reuters.

offered by Local Computer Networks to provide individual computing power complemented by communication between users and selected the Zynar system as being most suitable for his requirements. The combination of individual computers and communication parallels the dealers' activity. Whilst building up a deal instant response is required to display amounts; rates; currencies' buying and selling location etc. Once a deal is agreed it is built into the individual's position for that day, but

also sent over the network to the central disk storage. From this transaction record two actions are automatically initiated — a deal ticket is produced and the total position is updated. This latter can be queried by the dealers on one of the 3 displays built into their desks. To add to the speed and ease-of-use, keyboards are completely dispensed with (except for interaction with the Reuters system). The latest desks have graphics tablets built in, and the dealer simply uses a pen to select relevant information displayed on an overlay.

## RAPID ASSESSMENT

To the dealers this system has meant more rapid assessment of individual deals, and instant knowledge of their overall position at any time. In addition, at the end of the day they are provided with a comprehensive summary of activity, broken down by customer, location and time. To the FX operation as a whole it represents the ability to consolidate many rapidly changing pieces of information in 'real-time' in order to assess the global situation.

To the outsider it means order from chaos.

# NEW PRODUCT ~ STOP PRESS

## OverView

### In-House Viewdata with a Difference

Zynar Ltd announces OverView, an in-house Viewdata system with unique features to complement its successful Local Computer Network system.

Viewdata systems are acknowledged as an excellent means to provide information to key personnel in a way which is both easy to use and flexible. The ability to mix

colour graphics and text in 'frames' which also guide the user to his next action provide a readymade solution to many pressing requirements for information.

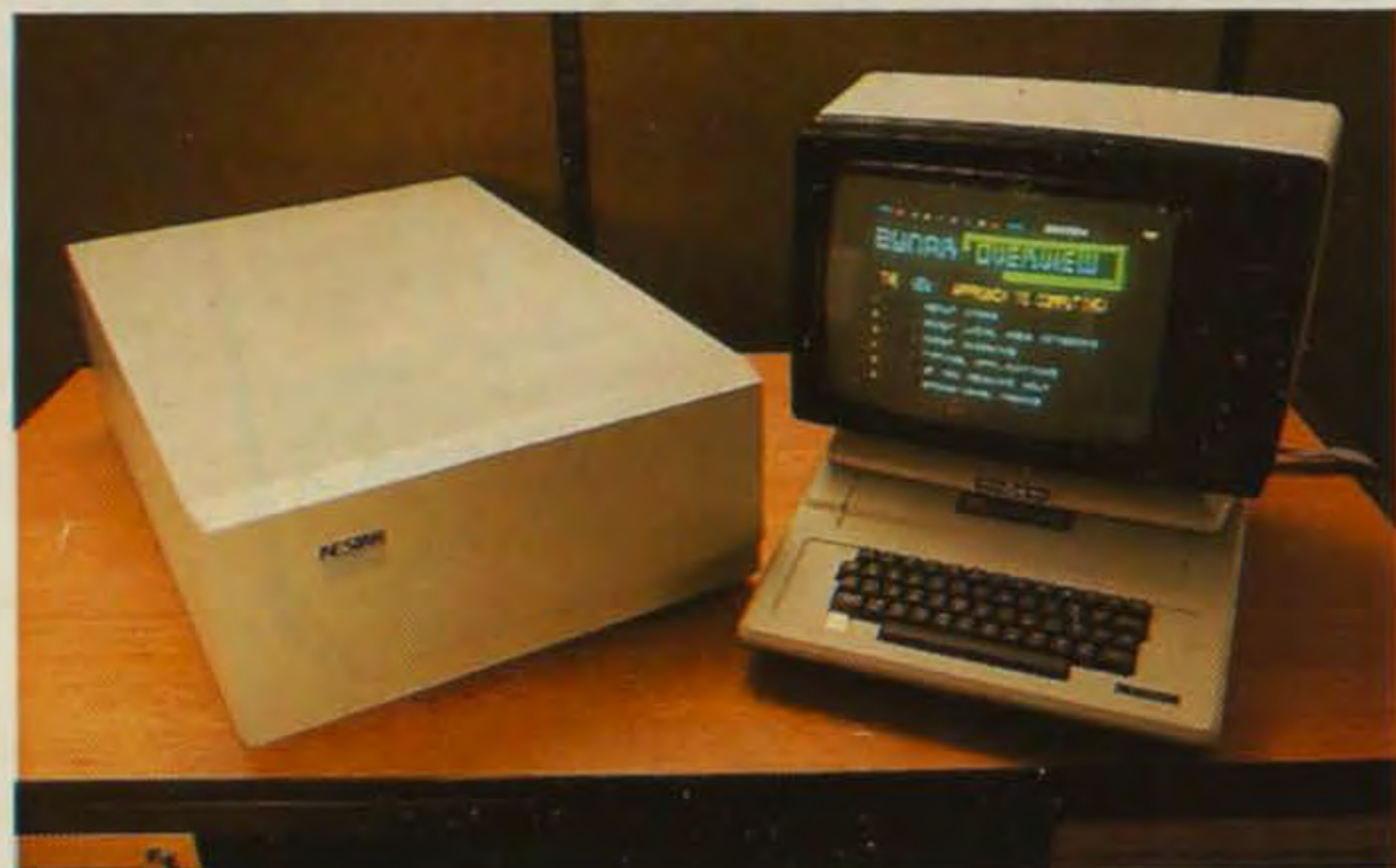
OverView offers even more. It integrates naturally with the Zynar system, where individual users have their own microcomputer workstations linked on a network to facilitate communication and resource-sharing. Authorised users can create OverView frames which are then accessible by the whole network population, or by closed user groups. Other applications can run on the network at the same time, and the OverView workstations can run other network programs as required. In addition, other application systems can be written such that they report results into OverView frames for simple access by unskilled personnel. Conversely, 'response-frames' en-

able users to provide information via OverView frames, which can then be used by other application systems.

OverView represents a considerable advance as an information system, and as a common base for building other application systems.

Key features are listed below:

- Familiar colour Viewdata display
- Compatible with Prestel and other Viewdata systems
- Interfaces with other applications via response frames
- Supports bulk-updating of remote viewdata systems
- High resolution colour graphics capability as well as normal viewdata graphics
- Easy generation and filling-in of documents (eg weekly summaries, expense claim forms, sales performance summaries)
- Supports 'closed user groups' and other security features.



OverView was developed jointly with Owl Computers.

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# ZYNAR

## SILICON TECHNOLOGY & COMPUTER SCIENCES

**A regular summary of Press  
information; articles and  
product announcements**

**Volume 1  
Issue 2  
September 1982**



*Zynar's Head Office in Uxbridge — this discreet Regency frontage protects passers-by from the white heat of Zynar's technology.*

At a party recently, I met the Marketing Manager for a very well-known soft drink. After spending some minutes explaining the unique aspects of the product and market, he confessed that he personally never touches the stuff. To my mind this immediately destroys the credibility of the product, and one of the topics in this issue is to show how Zynar fully uses the products which it markets.

We are also reproducing some of the considerable press coverage

which we are still receiving. Some of this is as a result of a press conference held in June, where our product strategy for 1982/3 was revealed. Some of these products are now available, and brief descriptions are included.

Examples of recent customer installations are also given — perhaps we can include you in the next issue . . .

Roy Sheridan  
Marketing Manager

## HOVLAND BUSINESS SYSTEMS

Zynar has provided finance for the establishment of Hovland Business Systems Ltd. HBS will specialise in the development and implementation of banking systems based on the Zynar networks.

The co-founders of HBS are Hal and Per Hovland.

Hal Hovland holds a first class honours degree in Cybernetics. Prior to co-founding Hovland Business Systems, he was Vice President within the Treasury Group of Citibank, London. Here, he designed and implemented systems for dealer support and built up a unique team, outside the Data Processing department, working directly for Treasury. The systems were based on the Cluster/One network.

Per Hovland brings over 8 years experience of Retail Systems to Hovland Business Systems. He brought the STOREMASTER system to the UK during his time at Ial Gemini (the UK subsidiary of Cap

Gemini Sogeti) where he was Southern Branch manager. He began working with with Retail Point of Sale systems in 1974 with NCR, where he spent 2½ years as a sales executive. In 1976 he joined ICL's Retail and Distribution sector as area sales manager responsible for Retail Terminals and Systems.

As well as consultancy and support, HBS offer personal computer and network-based systems for:

Foreign Exchange Position  
Keeping System  
Money Market Cash Flow  
Analysis System  
Liability Reference System  
Direct Deal Capture and Dealer  
Support Systems.

Zynar is experiencing considerable success in the banking industry. The establishment of HBS provides the means of complementing an excellent product range with in-depth industry expertise. Watch this space for major announcements.

## ZYNAR IN EUROPE

### ZYNAR VERTRIEBSGESELL- SCHAFT MBH

Based in Wiesbaden close to the commercial centre of Frankfurt, the Zynar operation in Germany continues to grow. Cluster/One featured prominently on the Apple stand at the 1982 Hanover Fair. Much interest was shown in the extensive features of the Cluster/One, and particularly in OverView, Zynar's in-house Viewdata (Bildschirmtext!) system. Hanover, of course, is an international show, and it was gratifying to note the cosmopolitan nature of the enquiries.

Zynar will be exhibiting on their own stand at the influential Orgatechnik exhibition in Cologne in October, reinforcing the effort the company is putting into the very important German market.

### SWITZERLAND

As well as a subsidiary — Zynar GmbH — in Germany, Zynar has an established and expanding distributor network throughout Europe.

One of the more recent companies to join the club is Signamatic in Berne, Switzerland. Signamatic has considerable expertise in communication systems which is an ideal background for selling networks.

*Part of the Athens dealing room.*



Cluster/One was on show at the Computer '82 exhibition in Lausanne and it will be shown again at BUFA in Geneva in September.

### GREEK NET

Kicking and screaming, Zynar's technical support Manager, Ian Powers, was recently despatched from the Uxbridge drizzle to the sunshine of Athens to supervise the installation of a network in Citibank's local office.

Athens is a significant foreign Exchange centre, and following the success of the installation in London, Athens is the first foreign branch to take the system. The decision was made after a visit to Citibank in the Strand, and to Zynar in Uxbridge. Zynar were able to supply the network components within two weeks, workstations being supplied locally by Rainbow Computers of Athens, who are also providing local support.

That was when Ian Powers came in. Under his supervision the system was installed and running within the space of one weekend.

The objective was to commission the system with non interruption to the dealing operation, since any such impact can be very expensive! These objectives were met, and, as a local manager observed, it was the first time he had seen a system installed and working ahead of schedule and within budget.



The past six months have been busy ones for everyone connected with Zynar. We have announced several new products and enhancements to the Cluster/One network in order that we can offer full mainframe facilities within the micro-environment. The next few months will be just as busy as we introduce new application software for use on the network and expand our range of communication facilities.

Press coverage of our activities has been substantial and we include some of the press clippings below.

Robert Thorpe, Product Planner

## Print spooling on Network

Mainframe style print spooling is now available on Zynar's Cluster/One personal computer network using the Network Print Server which allows up to six different printers attached to one workstation to be shared by up to 64 network users. Facilities include user specified priorities, including overnight, user control of print features such as page length and number of copies, comprehensive installation defaults and full integration with Cluster/One software. The server will also handle requests from more than one network and will provide print queue displays at user stations. Based on an Apple II, the print server station operates unattended and can handle files written under any of the Apple II operating systems. In addition it can be used as a normal workstation when not handling printing.

Computer Systems  
July 1982

## Multi-User VisiCalc

At the NCC in Houston, Texas, Zynar reinforced its hold on the network market by demonstrating how VisiCalc can now be supported on the Cluster/One personal computer network.

The new product, called MultiCalc, has been developed by Nestar, Zynar's sister company, in the US. It is a binary program that enables users of the network to exchange VisiCalc worksheets with other network users. It makes all the standard services of the Zynar network available to VisiCalc users, including MESSENGER, spooled printing capabilities and the transfer of files locally or remotely. A standard VisiCalc disc is required by each Apple II workstation running MultiCalc.

# NEW PRODUCTS ~ 1982

## Overseas transfer of network files

Zynar announces the availability of the File Transfer Server (FTS) for the Cluster/One personal computer network. This product is the latest in a range of software and hardware designed to increase the communication facilities of personal computer networks, while maintaining the associated cost advantages.

The Cluster/One Network provides multi-user file and printer sharing through its network file server and print server. The file transfer system extends and expands this concept by allowing information to be transferred between users on different networks. These networks may be on the same site or geographically remote, and FTS even allows direct transfer of files between the UK and overseas sites.

Installation of FTS will allow network users to send electronic messages between sites directly from one desktop to another.

What's New in Computing  
July/August 1982

## More Power for the Apple

Zynar Ltd. announces a new interface card for the Apple II and III computers that will help sophisticated users capture data more effectively. The Buffered Communications Card (BCC) is a serial interface with its own 6502 processor and FIFO buffers. This has many advantages over other RS-232 (V24) cards and cures a very familiar problem — the random loss of characters when collecting data faster than the Apple can cope with. Until now, this could be only solved by extremely tight programming which would extend development times and make software maintenance practically impossible.

The new card can be commanded from BASIC or PASCAL, relieving the need to write assembly-level drivers. The BCC is already being used on the Zynar CLUSTER/ONE Network at Citibank, where it enables the Apples to accept rapid data entry from a digital tablet.

Other applications include:  
Interface to remote databases  
Control of multiple serial devices  
Rapid data collection from multiple serial devices  
Interfacing barcode readers  
Printer interface

In addition, the designer can code his own firmware for the BCC and use the resident processor as a data cruncher or pre-processor. As a result, data encryption or protocol handling does not tie up the Apple's main processor. A full range of V24 control signals, under software control, are provided, so that the design will cope with any device thrown at it! Other capabilities include separate input/output FIFO buffers, software configurable speeds from 50 to 19,000 baud, programmable periodic interrupts plus an 18 hours timer, PRESTEL, split speed compatibility, and automatic recognition/response to XON/XOFF.

## CP/M OPERATING SYSTEM FOR APPLE BASED NETWORK

Zynar Ltd. of Uxbridge announces the availability of CP/M as an optional feature for their Cluster/One Personal Computer Network.

CP/M is the industry standard 8-bit micro-computer operating system from Digital Research. Its addition to the Cluster/One network allows users access to a wide range of application software such as WORDSTAR and DBASE-II, and so expands the current range of software operating on the network under Pascal and DOS environments.

CP/M is supported on the network by an operation add-on feature of the existing Network File Server which provides shared storage for up to 64 Apple II and Apple III workstations. In addition each Apple II user station running CP/M requires a Microsoft Z80 Softcard. CP/M support is fully integrated into the Cluster/One network. Users have access to shared printer facilities, large capacity disk storage and are able to transfer files between networks.

Cluster/One CP/M has the following features:

- 8 different volumes can be accessed simultaneously
- variable sized virtual disks from 32 kilobytes to 8 megabytes can be defined on hard disk
- supports both Apple minifloppy disks and IBM-standard single density floppy disks
- supports 56 kilobytes of RAM per user station.

The introduction of Network CP/M is yet another step towards offering cross-industry compatibility on the Cluster/One network.



# NETWORK APPLICATIONS

## LANCASHIRE KITCHENS

**“Nobody does it better”**

“Nobody does it better!” says the advertisement which Lancashire Kitchens, the Blackburn based furniture manufacturers, run on Granada Television. Dave Gregson, Lancashire Kitchens’ Managing Director, feels that his computer system does it well too — it’s a Zynar Cluster/One Network, supplied and installed by Style Systems Ltd., a Zynar distributor and also Blackburn based.

Apples on the network at Lancashire Kitchens perform a variety of tasks including word processing and Style Systems’ own range of software covering Payroll, Accounts, Bill of Quantity, Bill of Materials and “Prospects”, a program which records sales leads, passes certain information back to other programs from which standardised replies and specialised quotations are prepared and monitors the effect of advertising campaigns. Other programs are planned which will take networked Apples into the factory.

Gregson has become a network enthusiast. “I think that the main advantage of this type of system is not just that everyone has access to files and software, but that the system will grow with you. I wanted flexibility and expandability without too much additional expense and that is what I have got with my network” he says. He is also happy to have close contact with Style Systems, a supplier who understands his business and can apply network technology in a creative way.

There has been an interesting bi-product of the network installation at Lancashire Kitchens. The offices at Blackburn are an integral part of the very impressive showroom facilities and so to prevent the network workstations and peripherals appearing intrusive, special furniture was designed to house the equipment. The result is quite startling. At the push of a button, the word processing printer emerges on an electrically powered lift from within a carefully disguised floor mounted acoustic cabinet and the Apple workstations are housed within specially matched desk units. The results were so successful that the company now manufacture a range of top quality Apple desks and complete office units!



*Traditional craftsmanship and high technology blend together at Lancashire Kitchens.*

## DUDLEY COLLEGE OF TECHNOLOGY

### Teaching and using new techniques

Dudley College of Technology use a Cluster/One network to perform a variety of tasks. Fundamentally the network is used as a teaching system by students involved in the many microcomputer science based courses, making Dudley students some of the first to be trained in the practical techniques of networking, but the flexibility of the network has allowed the College to extend its use into other areas.

Teaching activities are in progress on the network from 9.00am till 9.00pm every weekday except Friday, when the College closes at 6.00pm! As well as the microcomputer science students it is used by secretarial students, who learn word processing, and business studies students, who are trained to use accounting software. At the same time Apple workstations in the College’s administration area share network resources to carry out word processing and record keeping functions. Further extensions to the network are planned including an “OverView” private viewdata system, linked to PRESTEL in the College library and a communications link to Zynar’s in-house network.

The driving force behind the development of the network is Dr. Gordon Hopkins, Dudley’s Vice Principal. Of the network he says:—

“In training our students we like to think that we are providing them with professional skills which will equip them to work in a professional environment. At Dudley we have no reason to be embarrassed by the facilities we offer. We are teaching and using techniques which appear to be leading the field in the information processing race.”



*Dudley’s teaching room.*



# TRANSATLANTIC TECHNOLOGY

It is very easy to take technology for granted. At Zynar we have an explicit policy of using our own product to run the business. In effect, this means we combine data processing requirements with office automation functions on one system. One of the primary attractions of the network in this respect is its ability to grow and evolve with the company. The network consisted of five Apple II workstations sharing 16.5mb of disk when the company was established in mid-1980 (there being five people running the operation). Since then Zynar has grown rapidly, currently employing 46 people in operations, finance, sales marketing and development. The network has kept pace with this growth, so that each person has a workstation (some are Apple III) and now share some 200mb of on-line storage. The availability of the Print Server allows the user population to share 3 different types of printer. To optimise use of facilities the system has been split into 3 linked networks as below:

	Disk Capacity	No. of stns.	Print Server
Business Network	120mb	27	Letter quality High speed (A4) High speed (wide)
Development Network	60mb	13	High speed (wide)
Demonstration Network	20mb	3	Letter Quality

The networks are interlinked by one Gateway station, which allows users on one network to gain access to facilities (data; printers etc) on another.

The technology is such that individuals can use a wide variety of applications, communicate with each other; access common databases etc., and yet have only a low-cost workstation performing all these jobs. Furthermore, the growth in size and facilities has been achieved with little or no disruption to existing network users.

An exciting aspect of the network is its ability to encourage communications. The most heavily used application is the Messenger electronic mail system, which is used for the majority of office 'memos'. Not only does it allow the creation, storing, sending, forwarding and reading of mail, but it also allows, for example, financial models to be distributed for comment. There is no doubt that the lack of this facility would seriously undermine our office efficiency.



Nestar's Head Office in California — only a keyboard away!

But we are a multi-national company, and also work with other organisations. Nestar in California have a similar network, and our two networks are closely coupled by the File Transfer Server, which automatically sends and receives files from each location. It is amazing to be able to sit at a single workstation in Uxbridge, send a message to an opposite number in California and receive a reply within a couple of hours. And we can do

the same with Nestar's New York and San Francisco offices, as well as with our subsidiary in Germany, and several other locations in the UK and Europe.

When you are switching between electronic mail; financial planning; text processing and freely exchanging information with colleagues the world over, it is easy to lose sight of the technology which underpins this capability. This is real office automation.

## Gap filled?

Why should the announcement of a few enhancements to a low speed local area network (LAN) add up to a serious bid to supply the needs of the massive 'systems gap' that has opened up between mainframe and personal computers?

Zynar Ltd. (its slogan is 'silicon technology and computer sciences') and its Californian sister company, Nestar, will be extending the appeal of the Cluster/One LAN by providing remote communications facilities and by increasing its compatibility with existing mainframe and mini based data processing installations.

Since the announcement of the Apple computer based LAN nearly two years ago, 250 systems have been installed worldwide. Now customers will be offered IBM 3780 and 3270 emulation, a telex server and a file transfer server which allows auto-dial/answer connection between remote networks. They will also be able to obtain applications software for electronic mail, viewdata and databases and Zynar will be offering CIS Cobol CP/M and multi-user Visicalc.

Despite the modesty and pragmatism of the Cluster/One system (it *doesn't* contain twin 68000s running Unix, but it *does* work), Colin Crook, MD of Zynar matches the ambition of the company's slogan with his stated aim of addressing the £100 billion market for low cost information systems (in other words, personal computers in networks). By the end of this year the company hopes to have an installed base of 1000 LANs worldwide.

Crook feels that Zynar is well placed to provide VLSI based information technology and professional support and service; it seems that all he is waiting for is the coming to maturity of the next generation of 16 and 32 bit micros which will offer genuine minicomputer power. Meanwhile the company has demonstrated that Cluster/One is a sound product with customers such as Citibank and is quite content to supply and support this increasingly flexible LAN until the 16 bit stampede is well and truly under way.

Systems International  
August 1982

## ZYNAR ON SHOW

During the past 12 months, Zynar has participated in the following exhibitions and conferences.

Info '82

London, 9-12 February

Local Networks & Distributed Office Systems

London, 14-16 April

Hanover Fair

Hanover, 21-28 April

Videotex '82

London, 5-7 May

Computer '82

Lausanne, 25-28 May

Office Automation Show/Conference

London, 15-17 June

Speaker — Roy Sheridan

The 5th Generation Computer Conference

London, 7-9 July

Speaker — Colin Crook

Our currently planned schedule for future events is listed below:

BUFA

Geneva, 13-17 September

SMAU

Milan, 17-22 September

SICOB

Paris, 22 Sept-1 October

Orgatechnik

Cologne, 26-31 October

Software Supermarket

Wembley, 8-10 November

Speaker — Roy Sheridan

Which Computer Show

Birmingham, 18-21 January

Info '83

London, 22-25 February

Office Automation Show

London, 7-9 June

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